FIG.1

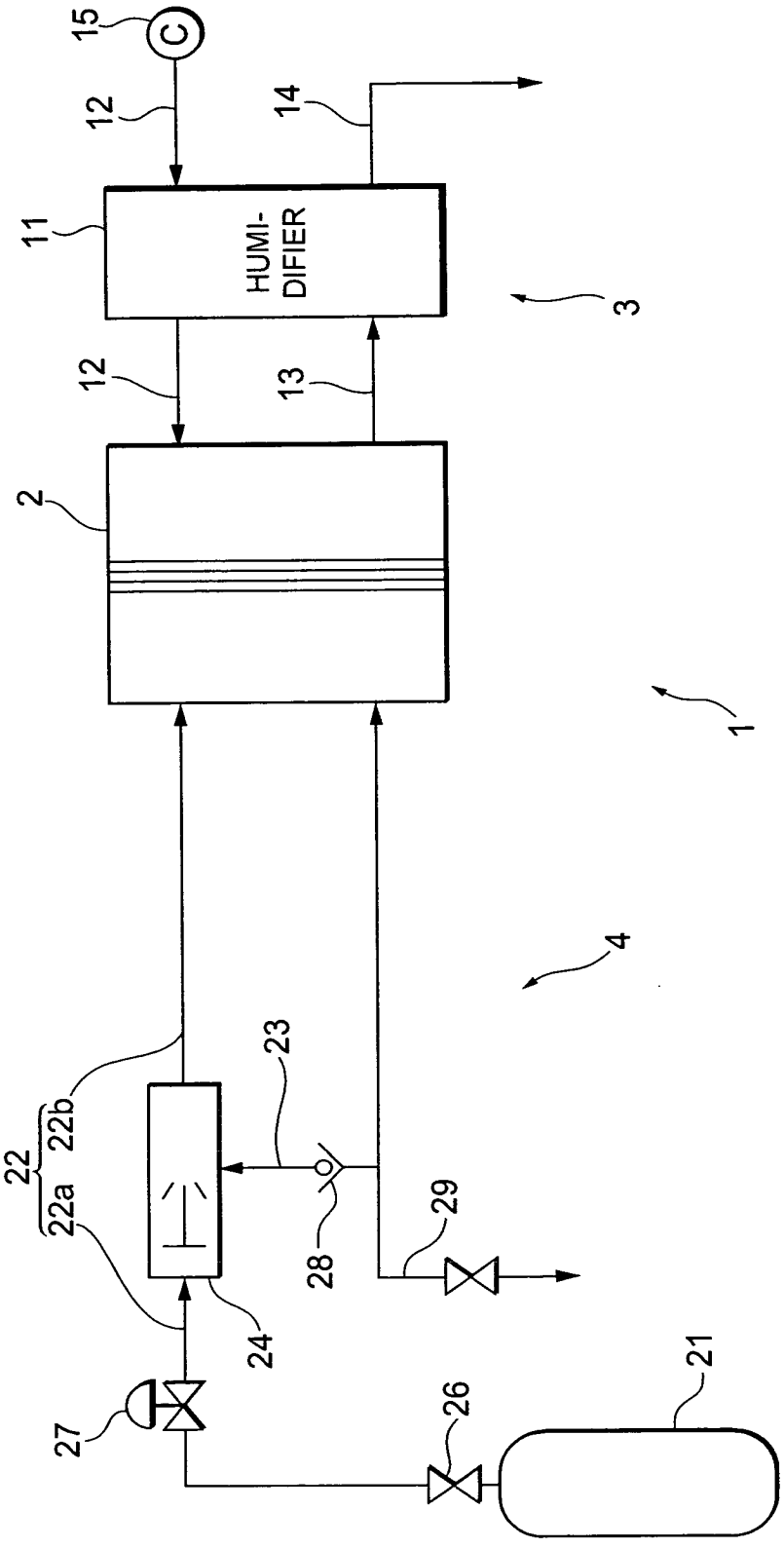


FIG.2

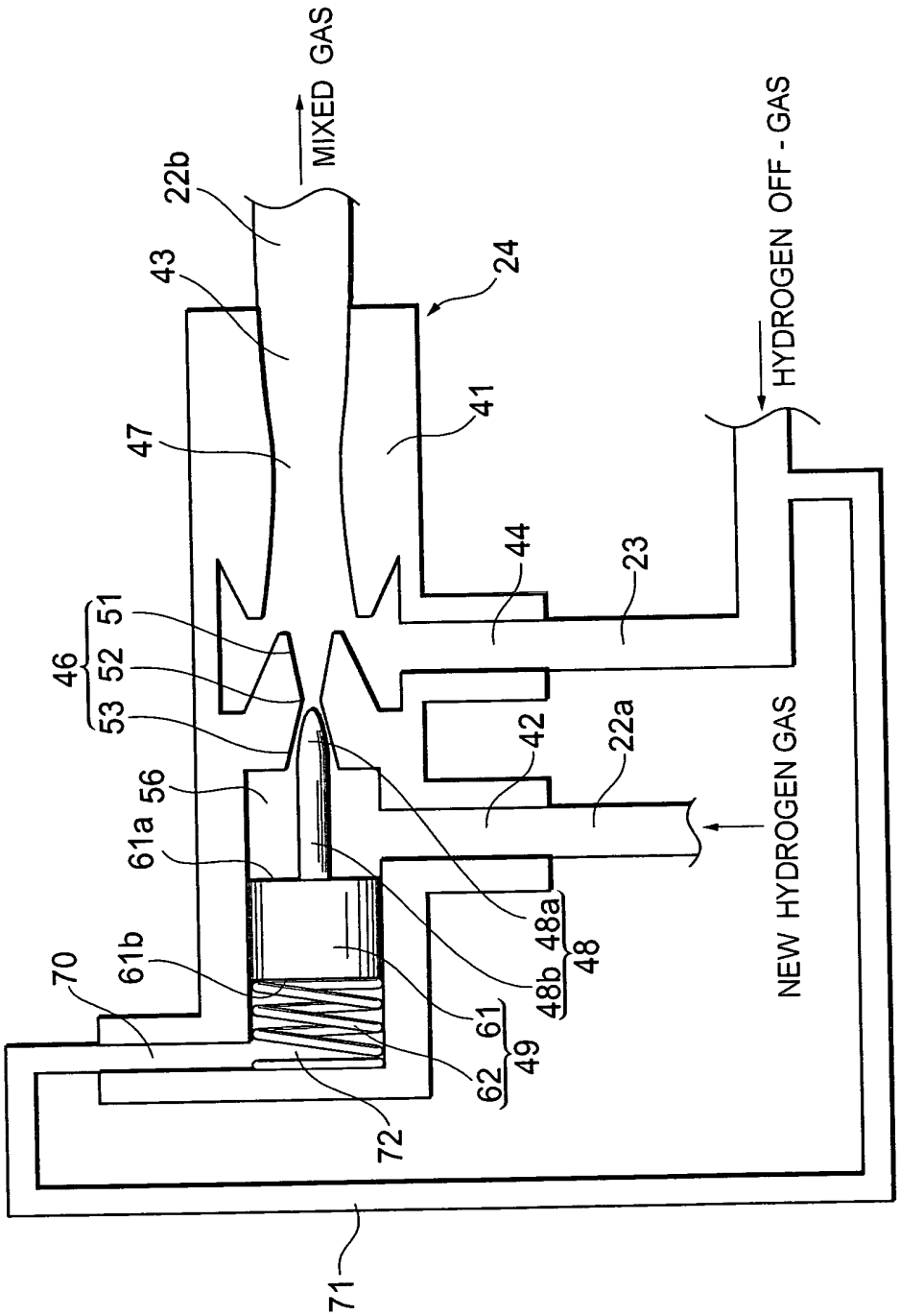
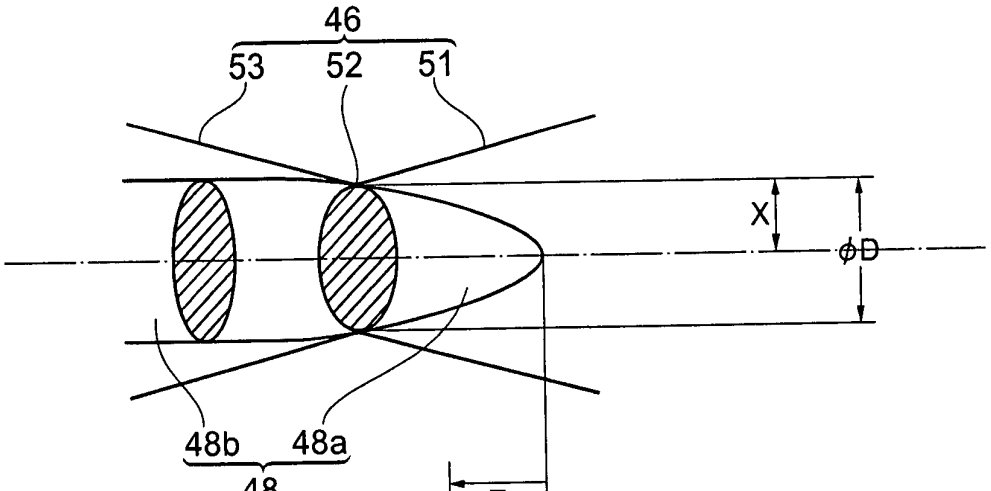

MIXED GAS
HYDROGEN OFF - GAS
NEW HYDROGEN GAS
22b
43
24
47
41
44
23
46
51
52
53
56
61a
61b
70
42
22a
48a
48b
48
61
49
62
72
71

FIG.3A



$(X,Z) = (\frac{D}{2}, 0)$

FIG.3B

$$Y = KZ \text{ ------- } (1)$$

$$Y = \pi\left\{ (\frac{D}{2})^2 - X^2 \right\} \text{ --------} (2)$$

$$X = \sqrt{(\frac{D}{2})^2 - \frac{Y}{\pi}} = \sqrt{(\frac{D}{2})^2 - \frac{KZ}{\pi}} \text{ --------- } (3)$$

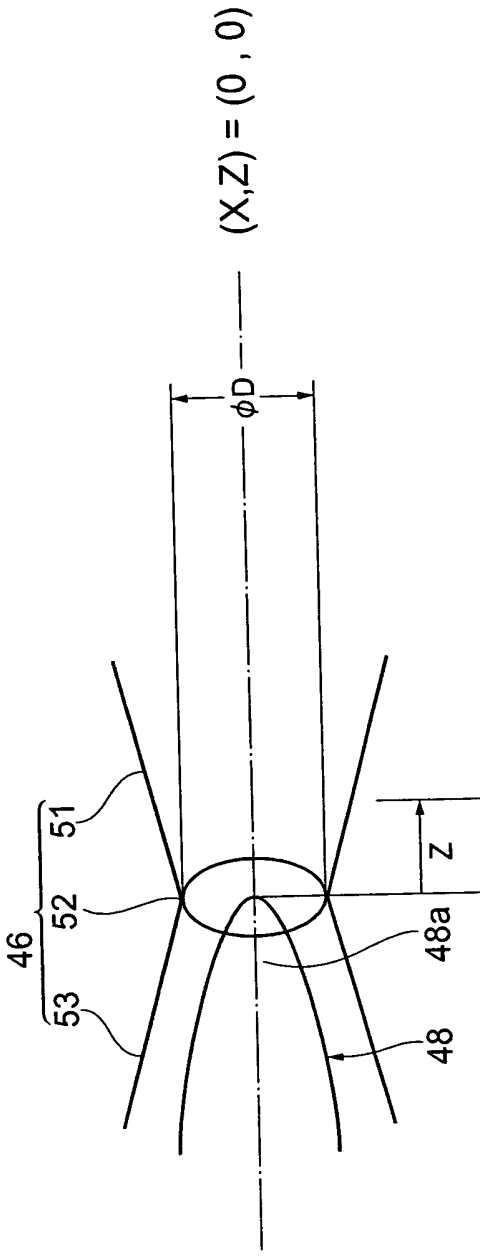


FIG.4A

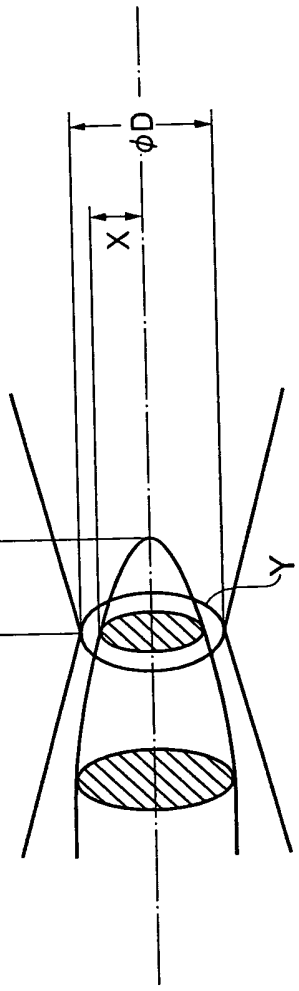
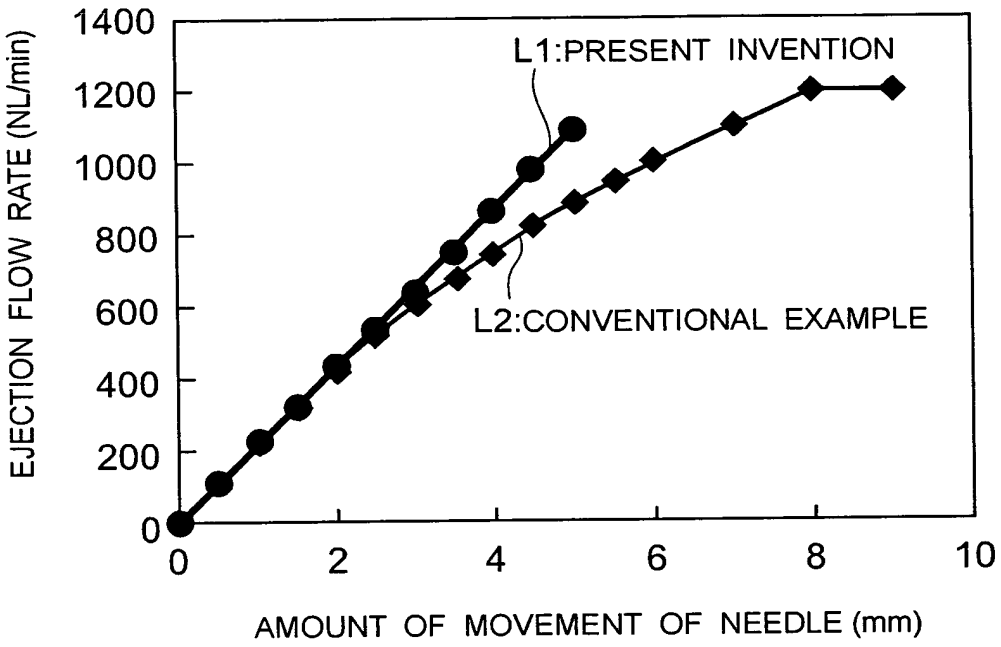


FIG.4B

$$X^2 = CZ \quad \text{------(4)}$$

$$Y = \pi\left\{\left(\frac{D}{2}\right)^2 - X^2\right\} = \pi\left\{\left(\frac{D}{2}\right)^2 - CZ\right\} \quad \text{------(5)}$$

FIG.5


1400
1200
1000
800
600
400
200
0
EJECTION FLOW RATE (NL/min)
L1:PRESENT INVENTION
L2:CONVENTIONAL EXAMPLE
0
2
4
6
8
10
AMOUNT OF MOVEMENT OF NEEDLE (mm)

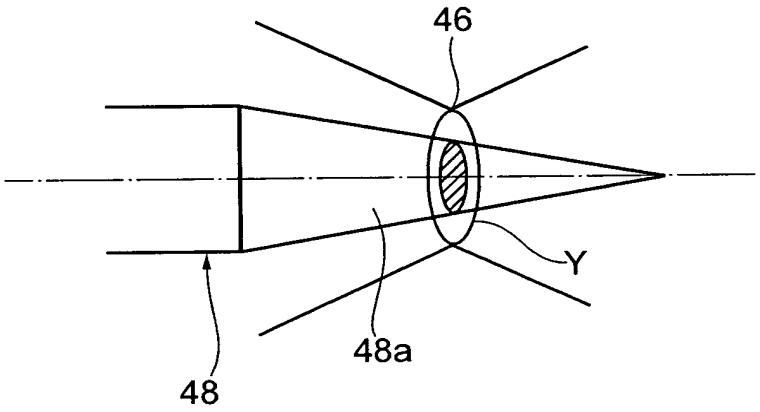



FIG. 6